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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/345,193	06/30/1999	KUI ZHANG	112025-0138	9934

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EXAMINER

JAIN, RAJ K

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/345,193

Applicant(s)

ZHANG ET AL.

Examiner

Raj K. Jain

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4-7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christie in view of Kompella et al..

Regarding claim 1, Christie teaches a method and system of communications control processing in telecommunications signaling. Signaling between number of network elements is illustrated, the elements may be switches, server, nodes etc., see col 4 lines 57-60. Path establishment is performed via correspondence between the elements of interest, (see col 1 lines 55-70, cols 5-6 and Fig1). Each network element (NE) path (Fig 1) say (131) and (133) create the first path for communications, determined by CCP (120), the next path is again selected by CCP (120) based on appropriate signaling from each of the elements of interest to see if the path is clear or not. Each path state is independently established until the link form the original source to the final destination has been created, allowing for a completion of the communications link. Christie also teaches the time stamping of the messages (claims 3 and 4), but does not teach the generating of the test message and latency calculations of the path in question. Kompella teaches a method of determining the latency of test messages traveling within a given network by

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time stamping the packets and measuring the roundtrip delay of a test message transmitted, see column 7 lines 35-50. The actual latency of a given path in a computer network having plurality of network nodes is dependent on multiple factors such as (bandwidth, delay and latency variations). Latency determination is critical for time sensitive applications such as video, multimedia and others that do not tolerate well for delayed packet delivery to its destination. Since Christie's applications involves communications between source and destination in general, it would be advantageous to determine the latency of a particular link that involves the delivery of time sensitive information to the recipient for proper processing and therefore inclusion of latency calculations as taught by Kompella would be critical to a communications link. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the latency calculations of Kompella within Christie for such a purpose.

Regarding claim 2, network layer addressing is common knowledge in the art for routing of data (see US patent US 6097719 A) and therefore one can easily adapt the use of network addressing within any communications applications as appropriate.

Regarding claims 4-6, Christie teaches establishing of a link from one node to the next and so on, see Figs 1 & 2 cols 5-8, the formulation of signals is also described for a given path, see Fig 5 and cols 14 lines 62-70 and col 15. The generation of test messaging between different nodes has been described above in item 3 (Kompella).

Regarding claim 7, the use of a clock management facility between the entities is inherent in order to determine the latency (as taught by Kompella) between the nodes/entities and therefore must be included to measure the delay between two points.

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3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christie in view of Kompella et al. and further in view of Masters et al. Christie and Kompella do not teach source routing within the network, Masters teaches source routing and sequential ordering by use of routing tables that have dynamic capabilities, which update information for each node as messages arrive and depart, see col 3 lines 40-70, each route is composed in sequential order (claims 8 and 17). Source routing provides efficiency for message delivery by allowing each node to actively decide and update its route table for the best possible path to the next node of delivery. Thus incorporating the source routing technique of Masters within Christie would improve message delivery amongst plurality of nodes within a communications system by allowing each node to update its route table with available path information for each of the connecting nodes the message may traverse. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include Masters source routing technique within Christie to improve message delivery within a communications network.

4. Claims 8, 9, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christie in view of Masters et al.

Regarding claims 8 and 9, Christie teaches the establishment of a path as discussed in item 3, Christie does not teach source routing within a network. Masters teaches source routing and sequential ordering by use of routing tables that have dynamic capabilities, which update information for each node as messages arrive and depart, see col 3 lines 40-70, each route is composed in sequential order (claims 8 and 17). Source routing provides efficiency for message delivery by allowing each node to actively decide and update its route table for the best possible

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path to the next node of delivery. Thus incorporating the source routing technique of Masters within Christie would improve message delivery amongst plurality of nodes within a communications system by allowing each node to update its route table with available path information for each of the connecting nodes the message may traverse. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include Masters source routing technique within Christie to improve message delivery within a communications network. Furthermore, the incorporation of a computer readable medium and program and execution of the program instructions is inherent to the invention, (also see claims 34-45 of Masters).

Regarding claim 13, Christie discloses throughout the spec the use of a processor within the subject invention for selection of network characteristics in response to a signal, col 3 lines 35-50. Masters discloses a routing technique, whereby each potential route is dynamically determined by each node transmitting the message to the next node (an option chosen by each node in question), see Fig 3 and col 3 lines 40-60, the combination of Christie's processor with Masters routing technique performs the same functions as the options processor of the subject claim.

Regarding claim 14, Christie teaches signaling protocol processor as discussed in item 3 above, establishing a path state.

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christie in view of Masters et al. and further in view of McCloghri et al. McCloghri teaches computer networking that identifies specific traffic flows between entities and requests and applies

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appropriate rules or services to the traffic flows that incorporate a router alert option (per claim 11) that act as policy enforcers (210) see Fig 2. Traffic specifiers (claim 10 and 12) are used that provide a "profile" or threshold for a link to avoid congestion, so as to properly route the packets from one node to the next without it being dropped, see abstract, col 3 lines 40-60 and col 11 lines 12-25. The use of a traffic specifier and a router alert option would help to reduce packet loss between nodes by providing status of traffic flow (congestion) to the sending node.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include McCloghri's traffic flow profile scheme within Christie to reduce packet/data loss within the communications network.

6. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christie in view of Masters et al. further in view of Woundy. Christie and Masters do not disclose a packet classifier, packet scheduler and the RSVP protocol. Woundy discloses a packet classifier, packet scheduler and the RSVP protocol, see col 1 lines 35-50. The use of a RSVP modules with the packet classifier and packet scheduler provides a method for dynamically allocating network resources with a desired QoS where needed within the network, see claims 1-5. This provides for efficient use of bandwidth amongst the nodes with minimal delay and efficient traffic flow within the network. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Woundy and Masters within Christie, that further allows each node to not only update its routing table, but also to allocate network resources dynamically providing the most efficient use of bandwidth amongst the nodes within an network.

Response to Arguments

7. Examiner has reviewed applicant's arguments with respect to claims 1-17 as filed in response to the Office Action filed on June 19, 2002. Examiner withdraws rejections filed on June 19, 2002, and submits revised Office Action rejecting claims 1-17 in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj K. Jain whose telephone number is 703-305-5652. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 305-3988, (for formal communications intended for entry)

Or:

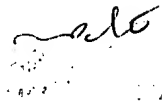
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(703) 305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

rj

October 22, 2002

A handwritten signature in cursive script, appearing to read "rj", located in the lower right quadrant of the page.